

Simplified patch management operations using NFM (Network Function Manager)

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The present article shows how the NFM (Network Function Manager) portal simplifies the operations of maintaining the Cisco BroadWorks servers by automatically **downloading software** and performing most patching management operations including **creating custom patch bundle (PB)**.

The NFM portal is the preferred solution for Cisco BroadWorks operators to manage patches and software. Considering that the Xchange portal will be eventually decommissioned, it is strongly advised to leverage and understand these functionalities in order to fully optimize maintenance operations.

The Network Function Manager also supports these operations:

- Listing patches
- Applying and removing patches
- Running healthmon
- Automatically/manually updating SWManager
- Creating patching report

High Level Architecture

Main Key Components

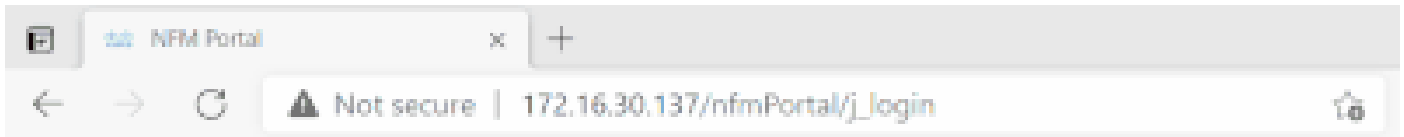
NFM Portal

The operators typically performs most of the operations through the admin portal available from the NFM FrontEnd. It is typically deployed on /nfmPortal/ and therefore available via `http(s)://<NFM_IP_or_FQDN>/nfmPortal/`.

User name


Password





User name

Password



Software Distribution Center

Cisco Repository

This is the source repository where all patches and other components are downloaded from. The repository is using Web-based Distributed Authoring and Versioning (WebDAV) and resides on Cisco. The transfers are fully automated as configured with the NFM scheduling.

```
NFM_CLI/Applications/SoftwareManagement/SoftwareDistributionCenter> get
site = https://api.cisco.com
username = <CiscoAccountLogin>
password = *****
downloadBinaryFiles = true
deletionDelayInDays = 1
```

```
connectionTimeoutInSeconds = 30
useCiscoDownload = true
```

```
NFM_CLI/Applications/SoftwareManagement/SoftwareDistributionCenter> validate
Validating Software Distribution Center configuration... successful.
NFM_CLI/Applications/SoftwareManagement/SoftwareDistributionCenter>
```

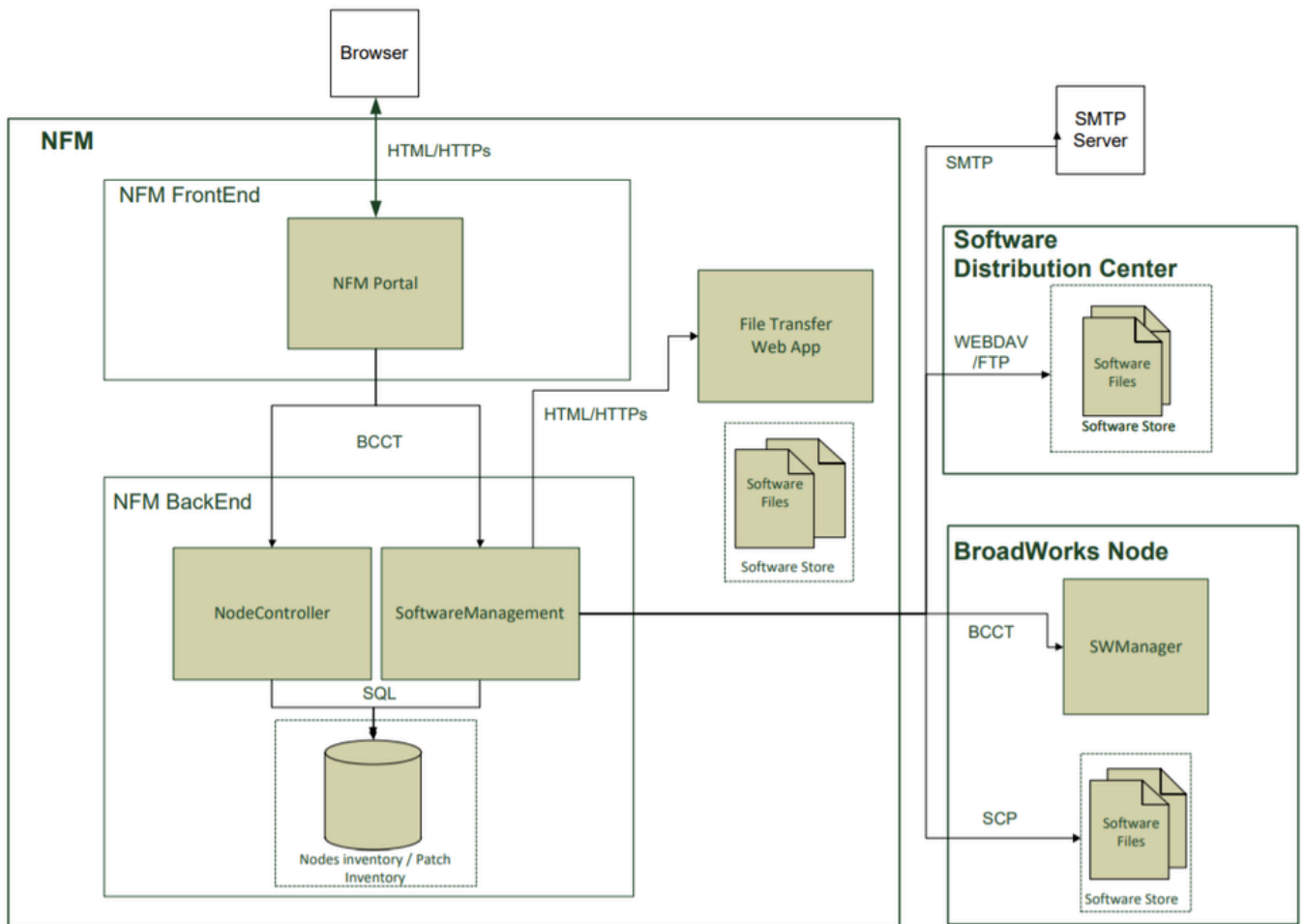
Local Repository

This is where the downloaded patches and other software components are stored locally, that is customer's environment.

Example:

```
bwadmin@r23nfm01.calocisco.com$ ls -l /var/broadworks/fileTransfer/software/22.0.1123/
as/
bss/
dbs/
ips/
nds/
ns/
platform/
ps/
ums/
xs/
xsp/
bwadmin@r23nfm01.calocisco.com$
```

Architecture Diagram



Creating a Custom PB (Patch Bundle)

Steps

- Login in the NFM portal
- Access the Software section from the left navigation panel
- Create a template by highlighting a specific software release, for example 24.0_1.944
- After expanding the selected release, click on 'Add' under the 'Templates' tab
- From the list of patches being displayed, select individual patches by manual selecting them or by using a filtering criteria, for example System Critical Patches (Sys Crit)
- Enter a "Patch Template Name" and "Save"
- After that step, the name of the Patch Bundle (BD) filename will eventually show up
- To transfer and/or apply this newly created PB, select a node from the list of the bottom panel
- Select the "Apply Patches" from the upper right pull down menu
- From the "Apply Patches" window, select the template name / patch bundle
- In order to only transfer the patch bundle (PB) file (and not to apply it), select "Upload patches only" checkbox
- Click on "Apply Patches" button
- The patch bundle (PB) will be transferred to the selected node under /var/broadworks/patches directory

Example



- Nodes
- Licenses
- Virtual Network Functions
- Network Monitoring
- Software

Node Management

<input type="checkbox"/>	Address	Node Name	Group Name	Server Type	Release	State
<input type="checkbox"/>	172.16.30.127	r23as01	Rel_23	AS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.128	r23as02	Rel_23	AS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.129	r23ns01	Rel_23	NS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.130	r23ns02	Rel_23	NS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.40	dan2server	TEST	AS	21.sp1_1.551	Bound
<input type="checkbox"/>	172.16.30.131	r23ms01	Rel_Independent	MS	2020.08_1.190	Bound
<input type="checkbox"/>	172.16.30.132	r23ms02	Rel_Independent	MS	2020.08_1.190	Bound
<input type="checkbox"/>	172.16.30.133	r23ps01	Rel_23	PS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.134	r23ps02	Rel_23	PS	23_0_1.1075	Bound
<input type="checkbox"/>	172.16.30.135	r23dbs01	Rel_23	DBS		Not Bound
<input type="checkbox"/>	172.16.30.136	r23dbs02	Rel_23	DBS		Not Bound
<input type="checkbox"/>	172.16.30.140	r23ums01	Rel_23	UMS		Not Bound
<input type="checkbox"/>	172.16.30.141	r23ums02	Rel_23	UMS		Not Bound
<input type="checkbox"/>	172.16.30.142	r23uvs01	Rel_23	UVS		Not Bound
<input type="checkbox"/>	172.16.30.143	r23nds01	Rel_Independent	NDS	2019.05_1.280	Bound



- Nodes
- Licenses
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Software Management

Server Type	Release
AS	22_0_1.1123
AS	23_0_1.1075
AS	24_0_1.944

Templates | Installation Patches | Binary File

Patch Template Name	Patch Bundle Name	Nb Of Patches	Generated Date	Default
SystemCriticalPatches	PB.as.24.0.944.pb20210312172527	24	2021-03-12	<input checked="" type="checkbox"/>

<input type="checkbox"/>	Node Name	Role	SWManager Version	Nb Of Applied Patches	Missing Critical Patches
<input type="checkbox"/>	dan2server	Standalone	958777	0	<input type="checkbox"/>
<input checked="" type="checkbox"/>	ol8as	Standalone	958777	0	<input checked="" type="checkbox"/>

<#root>

```
bwadmin@ol8as.cisco.com$ ls -lthr /var/broadworks/patches | tail -n1  
-rw-rw---- 1 bwadmin bwadmin 189M Mar 12 17:29
```

[PB.as.24.0.944.pb20210312172527](#)

```
.Linux-x86_64.zip  
bwadmin@o18as.cisco.com$
```

```
AS_CLI/Maintenance/Patching> detail PB.as.24.0.944.pb20210312172527  
Patch Name State
```

```
=====
```

AP.as.24.0.944.ap375266	installed
AP.as.24.0.944.ap370326	installed
AP.as.24.0.944.ap376023	installed
AP.as.24.0.944.ap376410	installed
AP.as.24.0.944.ap376889	installed
AP.as.24.0.944.ap375902	installed
AP.as.24.0.944.ap375646	installed
AP.as.24.0.944.ap375273	installed
AP.as.24.0.944.ap378164	installed
AP.as.24.0.944.ap378122	installed
AP.as.24.0.944.ap378150	installed
AP.as.24.0.944.ap375996	installed
AP.as.24.0.944.ap375655	installed
AP.as.24.0.944.ap375369	installed
AP.as.24.0.944.ap375489	installed
AP.as.24.0.944.ap375860	installed
AP.as.24.0.944.ap376147	installed
AP.as.24.0.944.ap374803	installed
AP.as.24.0.944.ap378506	installed
AP.as.24.0.944.ap374832	installed
AP.as.24.0.944.ap376024	installed
AP.as.24.0.944.ap377651	installed
AP.as.24.0.944.ap378178	installed
AP.as.24.0.944.ap376205	installed

24 entries found.

* -> Patch(es) applied from this bundle.

```
AS_CLI/Maintenance/Patching>
```

Getting Started and References

- [Cisco BroadWorks Feature Guides: Network Function Manager](#)
- [Network Function Manager: Patch Management](#)